

CLAIMS

What is claimed is:

1. An assembly for testing electrical components of optoelectronic devices before the electrical components are connected with the optical components of the optoelectronic device, the assembly comprising:

a base having a printed circuit board receptacle configured to receive a printed circuit board of an electrical component; and

an arm connected to the base, the arm comprising a flexible circuit having a data input and a data output, wherein the arm is selectively positionable between an open and a closed position, wherein in the closed position, the arm forms a temporary electrical connection between at least one of:

the data input and a transmit port of the electrical component, and

the data output and a receive port of the electrical component.

2. The assembly as recited in claim 1, wherein the arm is pivotally connected to the base.

3. The assembly as recited in claim 1, the arm further comprising at least one pressure fixture for applying pressure to the data input connection and data output connection of the flexible circuit against the transmit port and receive port of the electrical component, respectively, when the arm is in the closed position.

4. The assembly as recited in claim 3, wherein the at least one pressure fixture comprises a spring loaded pin.

5. The assembly as recited in claim 3, wherein the at least one pressure fixture comprises a piece of foam.

6. The assembly as recited in claim 1, the base and arm further comprising at least one magnet disposed thereon for assisting the arm in forming the temporary electrical connection between the flexible circuit and the electrical component.

7. The assembly as recited in claim 1, further comprising:
a first cable connected to the data input; and
a second cable connected to the data output.

8. The assembly as recited in claim 7, wherein the first and the second cables comprise coaxial cables.

9. The assembly as recited in claim 7, wherein the first cable and the second cable are the same cable.

10. The assembly as recited in claim 1, wherein the flexible circuit further comprises:

a data transmit port; and

a data receive port, wherein the data transmit port and the data receive port are configured to be electrically connected to a tester apparatus.

11. The assembly as recited in claim 10, wherein when the arm is in the closed position, a temporary connection is formed between at least one of:

the transmit port of the electronic component and the data transmit port of the flexible circuit, and

the receive port of the electronic component and the data receive port of the flexible circuit.

12. The assembly as recited in claim 1, further comprising a host computer configured to be placed in electrical connection with the printed circuit board of the electrical component.

13. The assembly as recited in claim 1, wherein the transmit port and receive port of the electrical component are configured to be coupled to a transmitter optical assembly and a receiver optical assembly, respectively.

14. The assembly as recited in claim 1, further comprising a mechanical clamp for applying pressure to the data input connection and data output connection of the flexible circuit against the transmit port and receive port of the electrical component, respectively, when the arm is in the closed position.

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15. A test apparatus, configured to test an electrical component of an optoelectronic device, the electrical component comprising a printed circuit board having a transmit port, a receive port, and an electrical interface, the transmit port and receive port being coupled to the electrical interface by transmit circuitry and receive circuitry, respectively, the test apparatus comprising:

a tester for generating an input data stream and for receiving and evaluating an output data stream, wherein the tester is configured to be temporarily connected to the electrical interface of the electrical component, wherein when the electrical component is temporarily connected to the tester, the electrical component is configured to receive the input data stream from the tester and to provide the output data stream to the tester;

a base having a printed circuit board receptacle configured to receive the printed circuit board of the electrical component; and

an arm connected to the base, the arm having a flex circuit that has a data input and a data output, wherein the arm is selectively positionable between an open position and a closed position, wherein in the closed position a temporary electrical connection is formed between at least one of:

the transmit port and the data input, and

the receive port and the data output.

16. The assembly as recited in claim 15, wherein the arm is pivotally connected to the base.

17. The assembly as recited in claim 15, wherein when the arm is in the closed position, a temporary connection is formed between at least one of:

the transmit port of the electronic component and the data transmit port of the flexible circuit, and

the receive port of the electronic component and the data receive port of the flexible circuit.

18. The assembly as recited in claim 15, the arm further comprising at least one pressure fixture for applying pressure to the data input connection and data output connection of the flexible circuit against the transmit port and receive port of the electrical component, respectively, when the arm is in the closed position.

19. The assembly as recited in claim 18, wherein the at least one pressure fixture comprises a spring loaded pin.

20. The assembly as recited in claim 18, wherein the at least one pressure fixture comprises a piece of foam.

21. The assembly as recited in claim 15, the base and arm further comprising at least one magnet disposed thereon for assisting the arm in forming the temporary electrical connection between the flexible circuit and the electrical component.

22. The assembly as recited in claim 15, further comprising a mechanical clamp for applying pressure to the data input connection and data output connection of the flexible circuit against the transmit port and receive port of the electrical component, respectively, when the arm is in the closed position.

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23. A method of testing an electrical component of an optoelectronic device, the electrical component comprising a printed circuit board having a transmit port, a receive port, and an electrical interface, the transmit port and receive port being coupled to the electrical interface by transmit circuitry and receive circuitry, respectively, the method comprising:

placing the electrical component in a testing assembly, the testing assembly comprising a flexible circuit;

forming a temporary electrical connection between the flexible circuit and at least one of the transmit port and the receive port of the electronic component;

transmitting an ingoing data stream through at least one of the transmit port and the receive port of the electronic component; and

evaluating an outgoing data stream the one of the transmit port and the receive port that received the ingoing data stream to determine if errors exist in the transmit circuitry or the receive circuitry of the electrical component.

24. The method as recited in claim 23, wherein forming the temporary electrical connection comprises selectively positioning a hinged member of the testing assembly to a closed position, the hinged member including the flexible circuit.

25. The method as recited in claim 23, wherein forming the temporary electrical connection comprises pressing the flexible circuit against the transmit port or the receive port of the electrical component.

26. The method as recited in claim 25, wherein pressing the flexible circuit comprises pressing at least one pressure fixture against the flexible circuit.

27. The method as recited in claim 26, wherein at least one pressure fixture comprises a spring loaded pin.

28. The method as recited in claim 25, wherein pressing the flexible circuit comprises using a magnet form at least some of the pressure.

29. The method as recited in claim 23, wherein the flexible circuit has a data input and data output, wherein forming the temporary connection comprises forming a temporary electrical connection between the data input and the data output of the flexible circuit.

30. The method as recited in claim 29, wherein the temporary connection between the data input and the data output of the flexible circuit is formed by connecting a cable between the data input and the data output.

31. The method as recited in claim 30 wherein the cable is a coaxial cable.

32. The method as recited in claim 23, further comprising:

coupling the testing assembly to a test apparatus;

performing the transmitting and evaluating steps using the test apparatus;

and

repeating the coupling, transmitting and evaluating steps using a plurality
of test apparatuses.

33. The method as recited in claim 23, further comprising:

subjecting the electrical component to a test environment during the
transmitting step; and

repeating the transmitting and evaluating steps while subjecting the
electrical component to a plurality of test environments at least during the
transmitting steps.

34. The method as recited in claim 33, wherein the plurality of test
environments include a plurality of distinct temperatures.

35. The method as recited in claim 33, wherein the plurality of test
environments include a plurality of power supply voltages.

36. The method as recited in claim 23, wherein the evaluating step comprises
determining a bit error rate between the ingoing data stream and the outgoing data
stream.